

SONY[®]

PROFESSIONAL FLAT DISPLAY MONITOR

GXD-L52H1

FLAT WIDE DISPLAY MONITOR

FWD-S47H1

FWD-S42H1

GXD-L65H1

PROTOCOL MANUAL

1st Edition (Revised 1)

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Overview

This protocol manual explains the basic configuration and operation for describing various commands that are used for a flat wide display monitor and professional flat display monitor (hereinafter referred to as a display). The display (this unit) can be controlled using commands described in Appendix.

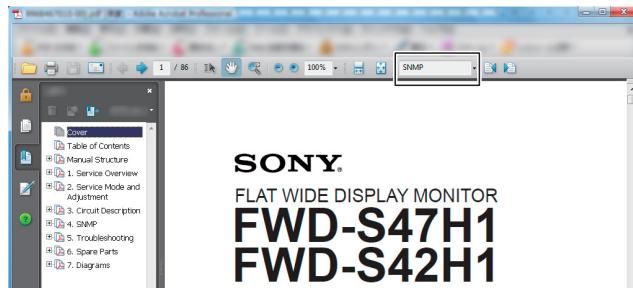
Search Function

Notes

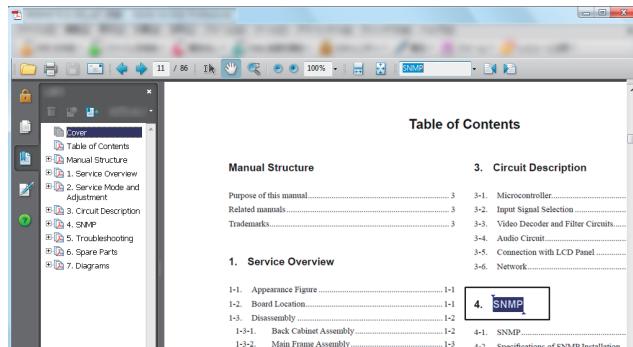
- The following shows the example when using Adobe Reader 8.
- If you cannot find the search function, select Edit → Search from the pull-down menu.

A function, menu, and command are searched using a service/protocol manual.

1. Open a file, enter the words, to be searched, in the frame indicated by the arrow on the screen below, and press the **Enter** key.

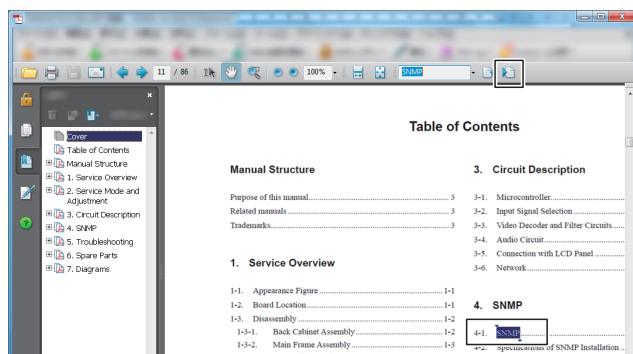


2. Search the corresponding words in a document file.



3. Click the button in the enclosed portion.

Search the corresponding place.



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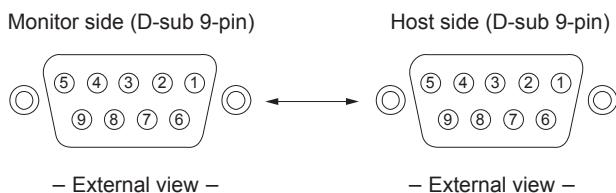
Section 1

RS-232C

1-1. Communication Parameters

Communication method	RS-232C
Synchronous method	Asynchronous
Baud rate	9600bps
Character length	8bit
Parity	None
Start bit length	1bit
Stop bit length	1bit
Flow control	None

1-2. Pin Assignment



Pin No.	Function	Pin No.	Function
1	NC	1	NC
2	TXD	2	RXD
3	RXD	3	TXD
4	NC	4	NC
5	GND	5	GND
6	NC	6	NC
7	NC	7	NC
8	NC	8	NC
9	NC	9	NC

Note

Use the RS-232C straight cable.

1-3. Communication Data Format

(a) Control message

No.	Item	Value
1	Header	0x8C: Control
2	Category	0xXX
3	Function	0xXX
4	Data1 (Length)	0xXX
5	Data2 (Data1)	0xXX
:	:	0xXX
:	:	0xXX
X	DataX	0xXX
X+1	Check Sum	0xXX

* Check Sum: Sum total of 1 to X. Lower one-byte data is validated when a value exceeds 255 (1byte).

(b) Enquiry message

No.	Item	Value
1	Header	0x83: Enquiry
2	Category	0xXX
3	Function	0xXX
4	Data1	0xFF
5	Data2	0xFF
6	Check Sum	0XX

* Check Sum: Sum total of 1 to X, lower one-byte data is validated when a value exceeds 255 (1byte).

(c) Answer message

① Control answer

No.	Item	Value
1	Header	0x70: Answer
2	Answer*	0x00: Completed 0x01: Limit Over 0x02: Limit Under 0x03: Command Canceled
3	Check Sum	0XX

* 0x00: Completed Packet is correctly received and process is also correctly completed.
 0x01: Limit Over Packet is correctly received, but the data value is over the upper limit.
 0x02: Limit Under Packet is correctly received, but the data value under the lower limit.
 0x03: Command Canceled Packet is correctly received, but the data value is not correct. The request cannot be accepted in the current host state.

* Check Sum: Sum total of 1 to X, lower one-byte data is validated when a value exceeds 255 (1byte).

② Enquiry answer (Complete)

No.	Item	Value
1	Header	0x70: Answer
2	Answer	0x00: Completed
3	Return Data Size	0XX
4	Return Data1	0XX
:	:	0XX
:	:	0XX
X	Return DataX	0XX
X+1	Check Sum	0XX

* 0x00: Completed Packet is correctly received and process is also correctly completed.
 * Return Data: Returns the read value.
 * Check Sum: Sum total of 1 to X, lower one-byte data is validated when a value exceeds 255 (1byte).

③ Enquiry answer (Command cancel)

No.	Item	Value
1	Header	0x70: Answer
2	Answer	0x03: Command Canceled
3	Check Sum	0x73

0x03: Command Canceled Packet is correctly received, but the data value is not correct. The request cannot be accepted in the current host state.

④ Error answer

No.	Item	Value
1	Header	0xE0: Answer
2	Answer*	0x00: No Function Error
		0x01: Check Sum Error
		0x02: Data Length Error
3	Check Sum	0xXX

* 0x00: No Function Error
Packet header, category or function code are not included in this protocol.
0x01: Check Sum Error
Check sum value of received packet is not correct.
0x02: Data Length Error
The data size of received packet is not correct.

1-4. Outline of Communication

A controller (PC) communicates with a display according to the communication data format. Communication is started by issuing a command from the controller. Communication is terminated when the display sends return data (an answer message) to the controller after it receives the issued command.

It is inhibited that a controller sends multiple commands at a time.

Therefore, a controller cannot send other commands until return data is sent back from a display after it sends one command. The display sends return data after command processing is completed.

Section 2

SNMP

2-1. SNMP

This unit installs SNMP (Simple Network Management Protocol). SNMP is a standard protocol for network management that was standardized in IETF (Internet Engineer Task Force).

By using SNMP, the management information of equipment connected to a network can be gotten via a network. The information of multiple equipment gotten using SNMP can also be unitarily managed by using SNMP management software.

The equipment corresponding to SNMP has a “management information database” called MIB (Management Information Base) in the inside of equipment. In SNMP, the bidirectional communication of data contained in MIB is realized between a “management system” and “management object system” that exist in a network.

In MIB, there is the standard MIB prescribed by RFC. Especially, MIB-II is its representative MIB. MIB-II was established to manage a network. MIB-II is installed in much network equipment such as a PC, router, and switch as a standard feature. This unit installs this MIB-II.

Monitoring and monitored sides exist when equipment is monitored via a network using SNMP. The monitoring side is called an “SNMP manager”. It is mainly constituted by the software of PC. For the monitored side, a module called an “SNMP agent” is installed. SNMP-compatible equipment transmits MIB information to an SNMP manager via this SNMP agent. This unit installs this SNMP agent. This unit can realize the communication with a general-purpose SNMP manager using this SNMP agent.

Basically, an SNMP agent replies only when an inquiry is sent from an SNMP manager.

The SNMP manager periodically inquires the equipment, which it manages, about MIB information. This way to get information is called “polling”. In polling, equipment replies using a response command when an SNMP manager sends a request command to equipment. By polling, therefore, equipment can be monitored without applying a high load to the equipment.

On the other hand, notification can also be done from the equipment side to an SNMP manager. This notification is called a “trap”. Using this trap, when a serious trouble occurred in equipment, it can be notified to the SNMP manager in a short time.

This unit is compatible with the two polling and trap protocols described above. Equipment can be efficiently monitored using these protocols.

2-2. Specifications of SNMP Installation

The specifications of the SNMP agent installed in this unit are shown in below.

- SNMP version: SNMPv1
- MIB definition: SMIv2
- Support PDU:
 - GetRequest
 - SetRequest
 - GetNextRequest
 - Trap
- Standard MIB to be installed: MIB-II

2-3. Installation

The setting below is required to use the SNMP function of this unit. (Set according to your network environment and SNMP management environment.)

- Community and its Community property
- Authentication trap
- Host restriction

The Web server function of this unit is used for setting. Refer to the Operation Manual of this unit for the operation of the Web server.

The contents of each item and the setting of SNMP are fully described in this specification.

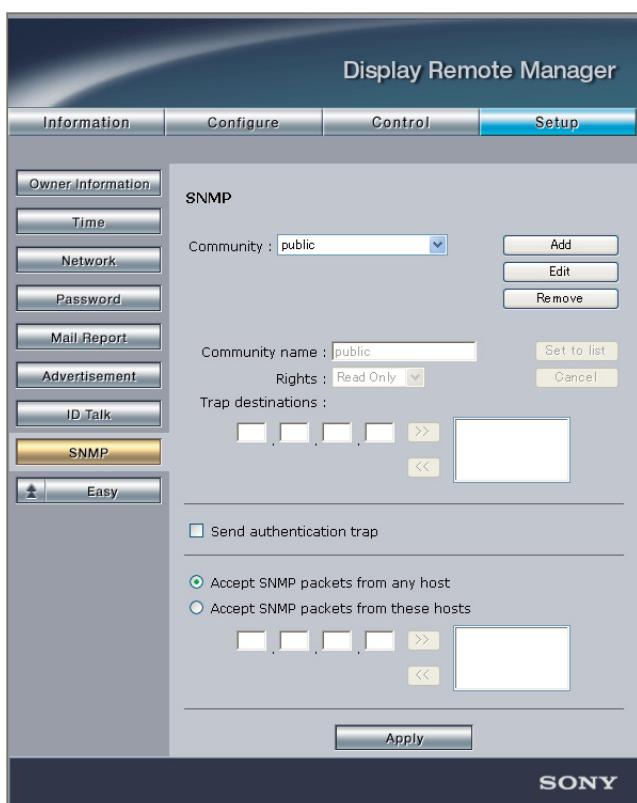
2-4. Operation of SNMP Setting Window

This section describes the procedure and contents for setting of SNMP.

Open the Web page of this unit and click the **SNMP** button in the Advanced setting item on the Setup page (where an administrator's password is necessary). The SNMP setting window is displayed.

- User name: root
- Password: pudadm

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SNMP Setting window (on Web Page)

2-4-1. Community

A Community name is used as the password for SNMP access. The request received from an SNMP manager is accepted when the Community name contained in the request coincides with the Community name set. The request is rejected when the former does not coincide with the latter.

A maximum of three Communities can be set.

There are “Rights” and “Trap destinations” items in the property of Community. The property can be set for each set Community.

Note

When multiple Communities are set, all set Communities are validated.

1. Rights

The rights that can be set are as follows:

Read Only: An SNMP manager can reference MIB information using this Community name.

Read Write: This Community must be set when a write request is sent from an SNMP manager.

Other: Do not set this option because it is used for the function extension in future.

2. Trap destinations

When Trap destinations are set, during trap occurrence, a trap is notified to the equipment set as trap destinations using the Community name set.

Up to four Trap destinations can be set to one Community.

Trap destinations are not set in default.

Note

This product can be set on only the Web screen because it does not install the automatic setting function of Trap destinations.

3. Setting procedure of Community

Community can be added, edited, and removed.

The addition, editing, and removal procedures of Community are described below.

Addition of Community

1. Click the **Add** button.
The “Community name”, “Rights”, and “Trap destinations” text boxes, and **Set to List** and **Cancel** buttons are validated.
2. Type the Community name you want to add.
3. Set the Rights of Community and the Trap destinations you want to add.
When you want to save the setting, click the **Set to List** button and then click the **Apply** button at the bottom of the window.

Notes

- Click the **Cancel** button when you want to discard the setting during setting.
- When you want to save setting, be sure to click the **Set to List** button and then click the **Apply** button.

Editing of Community

1. Select the Community, you want to edit, from a drop-down list.
2. Click the **Edit** button.
The “Community name”, “Rights”, and “Trap destinations” text boxes, and **Set To List** and **Cancel** buttons are validated.
Edit the Community name when you want to edit a Community name.
3. Set the Rights of Community and the Trap destinations you want to edit.
Notes
 - Click the **Cancel** button when you want to discard the setting during setting.
 - When you want to save the setting, click the **Set to List** button and then click the **Apply** button at the bottom of the window.

Removal of Community

1. Select the Community, you want to remove, from a drop-down list.
2. Click the **Remove** button and then click the **Apply** button at the bottom of the window.

Note

Be sure to click the **Remove** button and then click the **Apply** button.

2-4-2. Authentication Trap

An authentication trap is the trap for making it detect by an SNMP manager that an illegal access was gained to this unit using an SNMP protocol.

- The authentication trap is validated when this check box is selected. A trap is transmitted when an illegal access is gained.
- The authentication trap is invalidated when this check box is not selected. A trap is not transmitted even if an illegal access is gained.

Note

Be sure to click the **Apply** button when you edited setting.

2-4-3. IP Restriction of Host

It is possible to put restrictions on the IP address of an SNMP manager, as one of the security countermeasures, which communicates using an SNMP protocol.

- IP address restriction is invalidated when you select “Accept packets from any host”.
- Only the SNMP access from an SNMP manager that has the set IP address is accepted when you select “Accept packets from those hosts”. The SNMP access from an IP address that has not been set is rejected.

Notes

- Up to four IP restrictions can be set.
- Be sure to click the **Apply** button when you edited setting.

2-5. MIB to Be Installed

This unit installs MIB-II.

MIB-II is the most representative standard MIB. It is installed in various network products.

The statistical information on the amount of network traffic or the number of transmitted and received packets is defined, and the change or transition can be monitored by polling the information periodically. Additionally, the management items to be installed can be defined using a TCP/IP device so as to get the information effective for the monitoring of the network communication state.

Refer to RFC1213 for the detailed definition of MIB-II.

2-6. Information to Be Notified on Trap

In software version 2.0 or later, the software have a function that transmits error information to this unit. The error trap and authentication trap are installed.

Section 3

ID Talk

ID Talk is set as described below. ID Talk is a protocol for operating the function of this unit via a network.

3-1. Default Setting

Item	Description
Transport	TCP
Port number	53484 (Factory setting)
TCP connection time-out	30 seconds (Factory setting)

3-2. Setting Items

The items that can be set to ID Talk are shown in the table below.

Item	Description
Start ID Talk Service	Select the check box when using ID Talk. Clear the check box when using no ID Talk. (default setting: OFF)
Port No.	Changes the port number. A port number have to change port number 53484 cannot be used because it has been already used for another purpose.
Timeout	Specify the timeout time of connection. Connection is automatically disconnected when communication is not done for the specified time.
IP address of client (Host Address)	Executes only the request from the specified IP address. ID Talk does not have the security function such as user authentication. During installation, safety can be improved by setting this item. Multiple host addresses can be set.
Community	Changes the community of a header. Four (upper-or-lower case) alphanumeric characters can be set. (default setting: SONY)

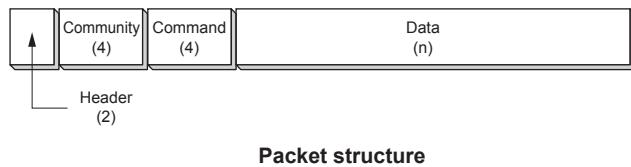
Set the items described above properly on the SETUP → ID Talk page of the Web page when using ID Talk.

Enter the SETUP page using the user name and password below.

- User name: root
- Password: pudadm

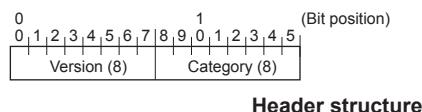
3-3. Packet Structure

The packet structure of ID Talk is described below.



1. Header

The header is constituted by two bytes consisting of a version (8 bits) and category (8 bits).



Version

Indicates the version number of an ID Talk protocol.

This version is fixed to 02h (version 2).

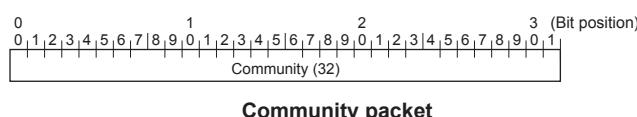
Category

Contains the category number of display equipment to be controlled. A category number is confirmed on the display equipment side. A request is ignored when a different category number is contained.

Code	Category
10h	Information Display

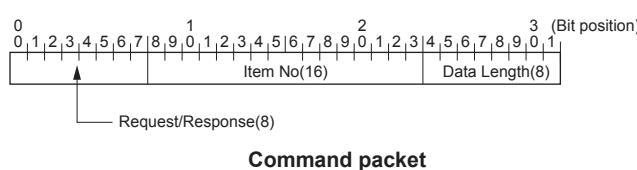
2. Community

A request is executed when community coincides with the community set in display equipment. Community consists of four (upper- or lower-case) alphanumeric characters. “SONY” is a factory-setting value. The set character can be changed on the Web page.



3. Command

The format of a request packet and response packet is described below.



4. Request

The format when sending a request from a host to display equipment is described below.

Community

This is the same alphanumeric character as the community set in display equipment that sends a request.

Request

This is a request for display equipment.

Item No.

This is the item number to be treated for request.

Data Length

This is the length of data incident to a request. The maximum length is 128 bytes. The length of data is “0” when no data exists.

Data

This is data incident to a request.

5. Response

The format when display equipment returns a response to the request from a host is described below.

Community

This contains the same alphanumeric character as a request. For a short header and short community, this is embedded with 00h.

Response

This contains the result of a request.

Item No.

This is the item number to be treated for response.

Data Length

This is the length of data incident to a response. The maximum length is 128 bytes. The length of data is “0” when no data exists.

Data

This is data incident to a response.

3-4. Requests and Responses

Requests and responses are described below.

1. Requests

Requests are only a GET request that gets the display information or state and a SET request that changes the setting of display equipment.

Request	Contents
SET (00h)	Writes data in the register of display equipment.
GET (01h)	Gets the installation information, equipment state, or setting values.

SET command:

Communication with the main microcomputer of display equipment can be done via a network by using the protocol dedicated to this unit as well as an ID Talk protocol. Use a SET command in this case. (Also, use a SET command when receiving information from the display equipment.)

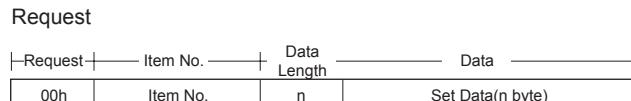
2. Responses

A response returns the result of execution to the request from a host.

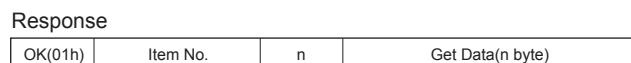
Response	Contents
NG (00h)	Indicates that a request is invalid or could not be executed.
OK (01h)	Indicates that a request could be executed normally.

3. SET request

The SET request sets a new value to the specified item. A request and its response are described in details below.



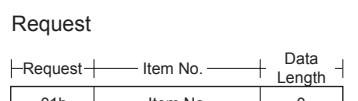
SET request



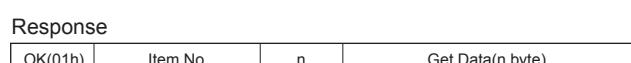
Response to SET request

4. GET request

The GET request gets the value of the specified item. A request and its response are described in details below.



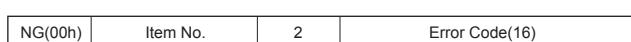
GET request



Response to GET request

5. ERROR response

An NG message is returned as a response when an error occurs in the contents of a request or the result of execution.



ERROR response

3-5. Items

Category	Contents	SET	GET
80**h	Gets the information of this unit	○	○
90**h	Gets the network setting information.	—	○
F100h	FWD-S42H1/S47H1 dedicated protocol	○	—

1. 80**h

This item gets the information of the connected display equipment.

Lower byte	Contents	SET	GET
00h	Category Code	—	○
01h	Model Name	—	○
02h	Serial Number	—	○
03h	Installation Place	○	○

0x8000 Category code

1 byte

0x8001 Model name

12 alphanumeric characters

For under 12 alphanumeric characters, the remaining section is set as 00h.

0x8002 Serial number

4 bytes

0x8003 Installation place

24 alphanumeric characters

For under 24 alphanumeric characters, the remaining section is set as 00h.

2. 90**h

This item gets the network setting information.

Lower byte	Contents	SET	GET
00h	MAC Address	—	○
01h	IP Address	—	○
02h	Subnet Mask	—	○
03h	Default Gateway	—	○
04h	DHCP	—	○

0x9000 MAC Address

6 bytes

0x9001 IP Address

4 bytes

0x9002 Subnet Mask

4 bytes

0x9003 Default Gateway

4 bytes

0x9004 DHCP

1 byte

DHCP invalid data value: 0

DHCP valid data value: 1

3. F100h

This unit dedicated protocol packets can be transmitted to the main microcomputer of this unit as ID Talk data according to this unit dedicated protocol. The response of protocol is returned as the data of ID Talk response packets.

3-6. Error Codes

An error code list and its details are shown in the table below.

Category	Error	Error code
Item Error (01**h)	Invalid Item	01h
	Invalid Item Request	02h
	Invalid Length	03h
	Invalid Data	04h
	Short Data	11h
	Not Applicable Item	80h
Community Error (02**h)	Different Community	01h
Request Error (10**h)	Invalid Version	01h
	Invalid Category	02h
	Invalid Request	03h
	Short Header	11h
	Short Community	12h
	Short Command	13h
Network Error (20**h)	Timeout	01h
Comm Error (F0**h)	Timeout	01h
	Check Sum Error	10h
	Framing Error	20h
	Parity Error	30h
	Over Run Error	40h
	Other Comm Error	50h
	Unknown Response	F0h
NVRAM Error (F1**h)	Read Error	10h
	Write Error	20h

1. Item errors

An item error occurs when the Item No. or Data of a request is invalid. The conditions under which each error occurs are described below.

Invalid Item

When Item No. that is not supported is specified

Invalid Item Request

When Item No. is supported, but Request that is not supported is requested

Invalid Length

When the Data Length of the specified Item No. is too long

Invalid Data

When the Data of the specified Item No. differs in the setting range

Short Data

When the length of data differs from the value specified using Data Length

Not Applicable Item

When an item that is not valid at present is specified

2. Community error

This error occurs when community differs.

3. Request errors

These errors occur when a header or command is invalid. The conditions under which each error occurs are described below.

Invalid Version

When the version of a header is other than 2

Invalid Category

When a category differs

Invalid Request

When a request that is not supported is specified

Short Header

When the received data is 1 byte

Short Community

When the received data is 2 to 5 bytes

Short Command

When the received data is 6 to 9 bytes

4. Network error

This error occurs in TCP/IP. The conditions under which an error occurs are described below.

Timeout

When communication was interrupted halfway

5. Comm error

This is an error that occurs during communication with the main control microcomputer or display equipment.

Timeout

When the received data is not sent after data transmission

Check Sum Error

When a check sum error occurs in the main control microcomputer

Framing Error

When a framing error occurs

Parity Error

When a parity error occurs

Over Run Error

When an overrun error occurs

Other Comm Error

When other errors occur

Unknown Response

When data that cannot be processed is received

6. NVRAM error

Read Error

When the read operation from NVRAM fails

Write Error

When the write operation to NVRAM fails

Simultaneous processing is not performed when one unit is controlled from multiple hosts via a network in Section 1.

A cancel command is returned to connection when access is gained from another host during processing of one command.

(0x02 0x10 0x53 0x4F 0x4E 0x59 0x00 0xF1 0x00 0x03 0x70 0x03 0x73)

Appendix 1

Command Examples

RS232 Command Examples

(1) Power On

	Header	Category	Function	Data1	Data2	Check Sum	
Command	0x8C	0x00	0x00	0x02	0x01	0x8F	
	Control	Mode Control	Power	FIX	ON	= 0x8C + 0x00 + 0x00 + 0x02 + 0x01	
	Header	Answer	Check Sum				
Answer	0x70	0x00	0x70	: When a command is completed			
	Control	Complete					
	Header	Answer	Check Sum				
	0x70	0x03	0x73	: When a command is canceled			
	Control	Command Canceled					

(2) INPUT SELECT HD15 RGB

	Header	Category	Function	Data1	Data2	Check Sum	
Command	0x8C	0x00	0x01	0x02	0x08	0x97	
	Control	Mode Control	Input Select	FIX	HD15 RGB	= 0x8C + 0x00 + 0x01 + 0x02 + 0x08	
	Header	Answer	Check Sum				
Answer	0x70	0x00	0x70	: When a command is completed			
	Control	Complete					

(3) MULTI DISPLAY BATCH

	Header	Category	Function	Data1	Data2	Data3	Data4					
Command	0x8C	0x20	0x11	0x08	0x01	0x03	0x00					
	Control	Size/Shift	Mullti Display Batch	FIX	2 × 2	Position 4	Tiles					
	Data5	Data6	Data7	Data8	Check Sum							
	0x1E	0x1E	0x1E	0x1E	0x41							
	H Size	H Shift	V Size	V Shift	= 0x8C + 0x20 + 0x11 + 0x08 + 0x01 + 0x03 + 0x00 + 0x1E + 0x1E + 0x1E + 0x1E = 0x141							
Arbitrary numbers in the range of 0x00 (minimum) to 0x3C (maximum)					* Lower one-byte data "41" is validated because the sum total exceeds 255 (0xFF).							
Answer	Header	Answer	Check Sum	Set to position 4 by multi-display 2 × 2.								
	0x70	0x00	0x70	: When a command is completed								
	Control	Complete										

ID Talk Command Examples

(1) Power On

Command	Header		Community				Request/ Response	Item No
	0x02	0x10	0x53	0x4F	0x4E	0x59		
Command	FIX (Version)	FIX (Category)	FIX (S)	FIX (O)	FIX (N)	FIX (Y)	Set	FIX
Data Length		Header	Category	Function	Data1	Data2	Check Sum	
0x06		0x8C	0x00	0x00	0x02	0x01	0x8F	
Data length after the above.		Control	Mode Control	Power	Data length after the above.	ON	$= 0x8C + 0x00 + 0x00 + 0x02 + 0x01$	
Answer	Header		Community				Request/ Response	Item No
	0x02	0x10	0x53	0x4F	0x4E	0x59		0xF1
Answer	FIX (Version)	FIX (Category)	FIX (S)	FIX (O)	FIX (N)	FIX (Y)	Set	FIX
Data Length		Header	Answer	Check Sum				
0x03		0x70	0x00	0x70	: When a command is completed			
Data length after the above.		Control	Complete					
Answer	Header		Community				Request/ Response	Item No
	0x02	0x10	0x53	0x4F	0x4E	0x59		0xF1
Answer	FIX (Version)	FIX (Category)	FIX (S)	FIX (O)	FIX (N)	FIX (Y)	Set	FIX
Data Length		Header	Answer	Check Sum				
0x03		0x70	0x03	0x73	: When a command is canceled			
Data length after the above.		Control	Command Canceled					

(2) INPUT SELECT HD15 RGB

	Header						Community		Request/ Response	Item No
Command	0x02	0x10	0x53	0x4F	0x4E	0x59	0x00	0xF1	0x00	
	FIX (Version)	FIX (Category)	FIX (S)	FIX (O)	FIX (N)	FIX (Y)	Set	FIX	FIX	
	Data Length	Header	Category	Function	Data1	Data2	Check Sum			
	0x06	0x8C	0x00	0x01	0x02	0x08	0x97			
	Data length after the above.	Control	Mode Control	Input Select	Data length after the above.	HD15 RGB	$= 0x8C + 0x00 + 0x01 + 0x02 + 0x08$			
	Header						Community		Request/ Response	Item No
Answer	0x02	0x10	0x53	0x4F	0x4E	0x59	0x00	0xF1	0x00	
	FIX (Version)	FIX (Category)	FIX (S)	FIX (O)	FIX (N)	FIX (Y)	Set	FIX	FIX	
	Data Length	Header	Answer	Check Sum						
	0x03	0x70	0x00	0x70			: When a command is completed			
	Data length after the above.	Control	Complete							

(3) MULTI DISPLAY BATCH

	Header				Community		Request/ Response	Item No				
Command	0x02	0x10	0x53	0x4F	0x4E	0x59	0x00	0xF1 0x00				
	FIX (Version)	FIX (Category)	FIX (S)	FIX (O)	FIX (N)	FIX (Y)	Set	FIX				
	Data Length	Header	Category	Function	Data1	Data2	Data3	Data4				
	0x0C	0x8C	0x20	0x11	0x08	0x01	0x03	0x00				
	Data length after the above.	Control	Size/Shift	Mullti Display Batch	Data length after the above.	2 × 2	Position 4	Tiles				
	Data5	Data6	Data7	Data8	Check Sum							
	0x1E	0x1E	0x1E	0x1E	0x41							
	H Size	H Shift	V Size	V Shift	= 0x8C + 0x20 + 0x11 + 0x08 + 0x01 + 0x03 + 0x00 + 0x1E + 0x1E + 0x1E + 0x1E = 0x141							
	Arbitrary numbers in the range of 0x00 (minimum) to 0x3C (maximum)				* Lower one-byte data "41" is validated because the sum total exceeds 255 (0xFF).							
					Set to position 4 by multi-display 2 × 2.							
					<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>1</td><td>2</td></tr> <tr> <td>3</td><td>4</td></tr> </table>				1	2	3	4
1	2											
3	4											
	Header				Community		Request/ Response	Item No				
Answer	0x02	0x10	0x53	0x4F	0x4E	0x59	0x00	0xF1 0x00				
	FIX (Version)	FIX (Category)	FIX (S)	FIX (O)	FIX (N)	FIX (Y)	Set	FIX FIX				
	Data Length	Header	Answer	Check Sum								
	0x03	0x70	0x00	0x70		: When a command is completed						
	Data length after the above.	Control	Complete									

Appendix 2

Common Command

Note The item, in a table, described below varies depending on the model used.

Example) (Refer to Appendix 3 “General information”.)

Check the reference and make necessary changes according to the model to be used.

1. General Function

(a) Mode Control

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Control	0x8C	0x00	Code Table(1-a)[a]	0x02	Code Table (1-a)[b]	0xXX
Enquiry	0x83			0xFF	0xFF	0xXX

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70
	0x70	0x01	Limit Over
	0x70	0x02	Limit Under
	0x70	0x03	Command Canceled

Answer	Header	Answer	Return to Data Size	Return Data1	Check Sum
Enquiry	0x70	0x00	0x02	Code Table (1-a)[b]	0xXX Completed

Code Table(1-a)

[a]Function	[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x00 Power	0x00	OFF	Yes	Yes	Enable	Enable
	0x01	ON				
0x01 Input Select ^{*1}	(Refer to Appendix 3 “General Function”.)					
0x02 Force Status Display	0x00	ON	Yes	Yes	Disable	Enable
	0x01	OFF				
0x03 Audio Mute	0x00	OFF	Yes	Yes	Disable	Enable
	0x01	ON				
0x04 Auto Status Display	0x00	ON	Yes	Yes	Enable	Enable
	0x01	OFF				
0x06 Color System	0x00	Auto	Yes	Yes	Disable	Enable
	0x01	NTSC				
	0x02	NTSC4.43				
	0x03	PAL				
	0x05	PAL-M				
	0x06	PAL-N				
	0x07	PAL60				
0x0F Language	0x00	Japanese	Yes	Yes	Disable	Enable
	0x01	English				
	0x02	Deutsch				
	0x03	Français				
	0x04	Español				
	0x05	Italiano				
0x10 Index Number	0x01-0xFF		Yes	Yes	Disable	Enable

(Continued)

Code Table(1-a)

[a]Function	[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x12 Standby Power	0x00	Standard	Yes	Yes	Disable	Enable
	0x01	Low				
0x13 ECO Mode (Power Saving)	0x00	Off	Yes	Yes	Disable	Enable
	0x01	ECO High				
	0x02	ECO Low				
0x14 Speaker Out	0x00	ON	Yes	Yes	Disable	Enable
	0x01	OFF				
0x18 Sync Mode	0x00	H/Comp	Yes	Yes	Disable	Enable
	0x01	Video				
0x1B Clock Display	0x00	OFF	Yes	Yes	Disable	Enable
	0x01	ON				
0x1D Color Matrix	(Refer to Appendix 3 "General Function".)					
FWD-S42H1/S47H1 and GXD-L65H1 are not used this command.						
0x22 Time Set (Hour, minute)	H: 0x00-0x17, M: 0x00-0x3B					
0x23 Time Set (Week)	(Refer to Appendix 3 "General Function".)					
0x24 Input Detect(Option)	(Refer to Appendix 3 "General Function".)					
FWD-S42H1/S47H1 and GXD-L65H1 are not used this command.						
0x26 Auto Shut OFF	0x00	OFF	Yes	Yes	Disable	Enable
	0x01	ON				
0x27 Auto Screen Adjust	0x00	OFF	Yes	Yes	Disable	Enable
	0x01	ON				
0x30 PAP	0x00	OFF	Yes	Yes	Disable	Enable
	0x01	P&P				
	0x02	PinP				
0x31 Active Picture	0x00	Left(P&P)/Main(PinP)	Yes	Yes	Disable	Enable
	0x01	Right (P&P)/Sub (PinP)				
	0x02	Swap				
0x32 Picture Size(P&P)	0x00-0x0E		Yes	Yes	Disable	Enable
0x33 Sub Picture Size (PinP)	0x00	Large	Yes	Yes	Disable	Enable
	0x01	Small				
0x34 Picture Position (PinP)	0x00	Position1	Yes	Yes	Disable	Enable
	0x01	Position2				
	0x02	Position3				
	0x03	Position4				
0x35 PAP Input Detect (Left/Main)	(Refer to Appendix 3 "General Function".)					
0x36 PAP Input Detect (Right/Sub)	(Refer to Appendix 3 "General Function".)					
0x40 Screen Saver	(Refer to Appendix 3 "General Function".)					
0x43 BackLight	0x00-0x64		Yes	Yes	Disable	Enable
0x44 Logo Illumination & Status LED	0x00	Logo Off	Yes	Yes	Enable	Enable
	0x01	Logo On (Low)				
	0x02	Logo On (High)				
0x45 Control Mode	0x00	Main+Remocon	Yes	Yes	Disable	Enable
	0x01	Main				
	0x02	Remocon				
	0x03	All Off				

(Continued)

Code Table(1-a)

[a]Function	[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On			
0x47 On Timer Enable	bit0	Sunday 1: Enable, 0: Disable	Yes	Yes	Enable	Enable			
	bit1	Monday 1: Enable, 0: Disable							
	bit2	Tuesday 1: Enable, 0: Disable							
	bit3	Wednesday 1: Enable, 0: Disable							
	bit4	Thursday 1: Enable, 0: Disable							
	bit5	Friday 1: Enable, 0: Disable							
	bit6	Saturday 1: Enable, 0: Disable							
	bit7	Every day 1: Enable, 0: Disable							
0x48 Off Timer Enable	bit0	Sunday 1: Enable, 0: Disable	Yes	Yes	Enable	Enable			
	bit1	Monday 1: Enable, 0: Disable							
	bit2	Tuesday 1: Enable, 0: Disable							
	bit3	Wednesday 1: Enable, 0: Disable							
	bit4	Thursday 1: Enable, 0: Disable							
	bit5	Friday 1: Enable, 0: Disable							
	bit6	Saturday 1: Enable, 0: Disable							
	bit7	Every day 1: Enable, 0: Disable							
0x65 IP Setting Mode	0x00	DHCP	Yes	Yes	Enable	Enable			
	0x01	Manual							
	0x02	Speed							
0x68 Speed Setting	0x00	100Mbps/Full Duplex	Yes	Yes	Enable	Enable			
	0x01	100Mbps/Half Duplex							
	0x02	10Mbps/Full Duplex							
	0x03	10Mbps/Half Duplex							
	0x04	Auto							
0x70 Input Skip	(Refer to Appendix 3 “General Function”.)								
0x71 Default Input	0x00	Last Memory	Yes	Yes	Enable	Enable			
	0x01	Option1							
0x74 Digital Signal Detect (DVI/HDMI/etc.) ²	0x00	VIDEO	No	Yes	Disable	Enable			
	0x01	PC							
0x75 Signal Status ³	0x00	Stable	No	Yes	Disable	Enable			
	0x01	Unstable/No Signal							
0x76 VIDEO Signal Detect	0x00	NTSC	No	Yes	Disable	Enable			
	0x01	PAL							
0x77 Priority Level of Signal select	(Refer to Appendix 3 “General Function”.)								
GXD-L52H1 and FWD-S42H1/S47H1 are used for only Enquiry.									
0x7A Logo Position	0x00	Auto	Yes	Yes	Enable	Enable			
	0x01	Landscape							
	0x02	Portrait							
0x7D Power Management Mode ⁴	0x00	OFF	Yes	Yes	Disable	Enable			
	0x01	ON							
0x7E On Screen Logo	0x00	OFF	Yes	Yes	Enable	Enable			
	0x01	ON (Default)							
0x7F LED	0x00	OFF	Yes	Yes	Disable	Enable			
	0x01	ON							
0x80 Standby Screen Saver Time	(Refer to Appendix 3 “General Function”.)								
GXD-L52H1 is not used this command.									

(Continued)

Code Table(1-a)

[a]Function	[b]Range/Switch Code	Command Control	Enquiry	Standby	Power On
0x81 Power On Delay	(Refer to Appendix 3 "General Function".) GXD-L52H1 is not used this command.				
0x82 Audio Delay	(Refer to Appendix 3 "General Function".) GXD-L52H1 is not used this command.				
0x83 IP Address (Player)	(Refer to Appendix 3 "General Function"). GXD-L52H1 is not used this command.				
0x85 Power On Batch	(Refer to Appendix 3 "General Function"). GXD-L52H1 is not used this command.				
0x86 HD15 Out	(Refer to Appendix 3 "General Function"). GXD-L52H1 is not used this command.				
0x89 Light Sensor	(Refer to Appendix 3 "General Function"). GXD-L52H1 and FWD-S42H1/S47H1 are not used this command.				
0x8A RGB Signal	(Refer to Appendix 3 "General Function"). GXD-L52H1 and FWD-S42H1/S47H1 are not used this command.				
0x8B Warm Up Mode	(Refer to Appendix 3 "General Function"). GXD-L52H1 and FWD-S42H1/S47H1 are not used this command.				
0x8C Warm Up Time	(Refer to Appendix 3 "General Function"). GXD-L52H1 and FWD-S42H1/S47H1 are not used this command.				
0x8D Picture Mute	(Refer to Appendix 3 "General Function").				

*1: Auto Signal Detect becomes Disable. When Option Slot is connected, Option command is Enable.

*2: Digital Signal Status is Enable for Digital Input Signal Detect Function only in Stable.

*3: Digital Signal or VIDEO Signal is Enable. Return Signal Status of Active Window.

*4: Only the panel power supply is turned off at the standby when setting it "ON".

2. Analog Signal Detect Function

(a) Mode Control

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x00	Code Table (1-a) [a]	Code Table (1-d)	0xFF	0XX

Answer	Header	Answer	Return to Data Size	Return Data1	Data2	Check Sum
Enquiry	0x70	0x00	0x02	Code Table (1-a) [b]	0xFF	0XX Completed

Code Table (1-a)

[a]Function	[b]Range/Switch Code	Command Control	Enquiry	Standby	Power On
0x78 Analog Signal Detect	0x00 VIDEO 0x01 PC	No	Yes	Disable	Enable

Code Table (1-d)

Input Select	
0x00	Main
0x01	Sub
0xFF	Present input

1-a[b]

When input is no signal or not supported signal, return value become Video (0x00).

3. Priority Signal Select Function

(a) Mode Control

(Refer to Appendix 3 “General Function”.)

4. RGB Signal

(a) Mode Control

(Refer to Appendix 3 “RGB Signal”.)

GXD-L52H1 and FWD-S42H1/S47H1 are not used this command.

(b) Time Control

Data Set (Month, Date)

Syntax	Header	Category	Function	Data1	Data2	Data3	Check Sum
Control	0x8C	0x00	0x7C	0x03	Month: 0x01-0x0C	Date: 0x01-0x1F	0xXX
<hr/>							
Syntax	Header	Category	Function	Data1	Data2	Check Sum	
Enquiry	0x83	0x00	0x7C	0xFF	0xFF	0xFD	

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70 Completed
	0x70	0x01	0x71 Limit Over
	0x70	0x02	0x72 Limit Under
	0x70	0x03	0x73 Command Canceled

Answer	Header	Answer	Return to Data Size	Return Data1	Return Data2	Check Sum
Enquiry	0x70	0x00	0x03	Month: 0x00-0x0C	Date: 0x01-0x1F	0xXX Completed

Year Set

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Control	0x8C	0x00	0x7B	0x02	Year: 0x00-0x63	0xXX
<hr/>						
Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x00	0x7B	0xFF	0xFF	0xFC

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70 Completed
	0x70	0x01	0x71 Limit Over
	0x70	0x02	0x72 Limit Under
	0x70	0x03	0x73 Command Canceled

Answer	Header	Answer	Return to Data Size	Return Data1	Check Sum
Enquiry	0x70	0x00	0x02	Year: 0x00-0x63	0xXX Completed

Clock Set (Hour, Minute)

Syntax	Header	Category	Function	Data1	Data2	Data3	Check Sum
Control	0x8C	0x00	0x22	0x03	Hour: 0x00-0x17	Minute: 0x00-0x3B	0xXX
<hr/>							
Syntax	Header	Category	Function	Data1	Data2	Check Sum	
Enquiry	0x83	0x00	0x22	0xFF	0xFF	0xA3	
<hr/>							
Answer	Header	Answer	Check Sum				
Control	0x70	0x00	0x70	Completed			
	0x70	0x01	0x71	Limit Over			
	0x70	0x02	0x72	Limit Under			
	0x70	0x03	0x73	Command Canceled			
<hr/>							
Answer	Header	Answer	Return to Data Size	Return Data1	Return Data2	Check Sum	
Enquiry	0x70	0x00	0x03	Hour: * 0x00-0x17	Minute: 0x00-0x3B	0xXX	Completed

Clock Set (Week)

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x00	0x23	0xFF	0xFF	0xA4
<hr/>						
Answer	Header	Answer	Return to Data Size	Return Data1	Check Sum	
Enquiry	0x70	0x00	0x02	Week: Code Table (1-e)	0xXX	Completed

Code Table (1-e)

Week Select	
0x00	Sunday
0x01	Monday
0x02	Tuesday
0x03	Wednesday
0x04	Thursday
0x05	Friday
0x06	Saturday

On Timer, Off Timer

Syntax	Header	Category	Function	Data1	Data2	Data3	Check Sum
Control	0x8C	0x00	Code Table (1-f) [a]	0x03	Hour: 0x00-0x17	Minute: 0x00-0x3B	0xXX
<hr/>							
Syntax	Header	Category	Function	Data1	Data2	Check Sum	
Enquiry	0x83	0x00	Code Table (1-f) [a]	0xFF	0xFF	0XX	
<hr/>							

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70 Completed
	0x70	0x01	0x71 Limit Over
	0x70	0x02	0x72 Limit Under
	0x70	0x03	0x73 Command Canceled

Answer	Header	Answer	Return to Data Size	Return Data1	Return Data2	Check Sum
Enquiry	0x70	0x00	0x03	Hour: 0x00-0x17	Minute: 0x00-0x3B	0xXX Completed

Code Table (1-f)

[a]Function	[b]Range/Switch Code	Command Control	Enquiry	Standby	Power On
On Timer					
0x50	Sunday	—	Yes	Yes	Disable
0x51	Monday	—			Enable
0x52	Tuesday	—			
0x53	Wednesday	—			
0x54	Thursday	—			
0x55	Friday	—			
0x56	Saturday	—			
0x57	Every day	—			
Off Timer					
0x58	Sunday	—	Yes	Yes	Disable
0x59	Monday	—			Enable
0x5A	Tuesday	—			
0x5B	Wednesday	—			
0x5C	Thursday	—			
0x5D	Friday	—			
0x5E	Saturday	—			
0x5F	Every day	—			

(c) IP Address Setting

IP Address

Syntax	Header	Category	Function	Data1	Data2	Data3	Data4	Data5	Check Sum
Control	0x8C	0x00	0x42	0x05	Address 0 0x00-0xFF	Address 1 0x00-0xFF	Address 2 0x00-0xFF	Address 3 0x00-0xFF	0xXX

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x00	0x42	FFh	FFh	0xC3

Subnet Mask

Syntax	Header	Category	Function	Data1	Data2	Data3	Data4	Data5	Check Sum
Control	0x8C	0x00	0x61	0x05	Address 0 0x00-0xFF	Address 1 0x00-0xFF	Address 2 0x00-0xFF	Address 3 0x00-0xFF	0xXX

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x00	0x61	FFh	FFh	0xE2

Gateway Address

Syntax	Header	Category	Function	Data1	Data2	Data3	Data4	Data5	Check Sum
Control	0x8C	0x00	0x62	0x05	Address 0 0x00-0xFF	Address 1 0x00-0xFF	Address 2 0x00-0xFF	Address 3 0x00-0xFF	0xXX

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x00	0x62	FFh	FFh	0xE3

DNS Primary

Syntax	Header	Category	Function	Data1	Data2	Data3	Data4	Data5	Check Sum
Control	0x8C	0x00	0x63	0x05	Address 0 0x00-0xFF	Address 1 0x00-0xFF	Address 2 0x00-0xFF	Address 3 0x00-0xFF	0xXX

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x00	0x63	FFh	FFh	0xE4

DNS Secondary

Syntax	Header	Category	Function	Data1	Data2	Data3	Data4	Data5	Check Sum
Control	0x8C	0x00	0x64	0x05	Address 0 0x00-0xFF	Address 1 0x00-0xFF	Address 2 0x00-0xFF	Address 3 0x00-0xFF	0xXX

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x00	0x64	FFh	FFh	0xE5

Player IP Address

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x00	0x83	FFh	FFh	0x04

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70 Completed
	0x70	0x03	0x73 Command Canceled

Answer	Header	Category	Function	Data1	Data2	Data3	Data4	Data5	Check Sum
Enquiry	0x8C	0x00	Code Table (1-a)[a]	0x05	Address 0 0x00-0xFF	Address 1 0x00-0xFF	Address 2 0x00-0xFF	Address 3 0x00-0xFF	0xXX

IP Address ex)
 192.128.14.1 → 192 (0xC0) Address 0
 128 (0x80) Address 1
 14 (0x0E) Address 2
 1 (0x01) Address 3

* IP address command can be carried out even in the standby state.

Code Table (1-a)

[a]Function		[b]Range/Switch Code	Command Control	Enquiry	Standby	Power On
0x42	IP Address	—	Enable	Enable	Enable	Enable
0x61	Subnet Mask	—				
0x62	Gateway Address	—				
0x63	DNS Primary	—				
0x64	DNS Secondary	—				
0x83	IP Address (Player)	—	Disable	Enable	Enable	Enable

5. Picture/Sound

(a) Picture/Sound

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Control	0x8C	0x10	Code Table (2-a) [a]	0x02	Code Table (2-a) [b]	0xXX
Enquiry	0x83			0xFF	0xFF	0xXX

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70 Completed
	0x70	0x01	0x71 Limit Over
	0x70	0x02	0x72 Limit Under
	0x70	0x03	0x73 Command Canceled

Answer	Header	Answer	Return to Data Size	Return Data1	Check Sum
Enquiry	0x70	0x00	0x02	Code Table (2-a) [b]	0xXX Completed

Code Table (2-a)

[a]Function	[b]Range/Switch code		Command Control	Enquiry	Standby	Power On
0x00 Contrast	0x00-0x64		Yes	Yes	Disable	Enable
0x01 Brightness	0x00-0x64		Yes	Yes	Disable	Enable
0x02 Chroma	0x00-0x32		Yes	Yes	Disable	Enable
0x03 Phase	0x00-0x64		Yes	Yes	Disable	Enable
0x04 Color Temp	0x00	Cool	Yes	Yes	Disable	Enable
	0x01	Neutral				
	0x02	Warm				
	0x03	Custom				
0x09 Sharpness	0x00-0x14		Yes	Yes	Disable	Enable
0x0A NR	0x00	OFF	Yes	Yes	Disable	Enable
	0x01	Low				
	0x02	Mid				
	0x03	High				
0x0B Cinema Drive	0x00	Auto	Yes	Yes	Disable	Enable
	0x01	OFF				
0x0C Dynamic Picture	0x00	OFF	Yes	Yes	Disable	Enable
	0x01	ON				
	0x02	Reserve				
0x0E Gamma Correct	(Refer to Appendix 3 "Picture/Sound".)					
0x10 Picture Mode	0x00	Standard	Yes	Yes	Disable	Enable
	0x01	Vivid				
	0x02	Custom				
	0x05	TC Control				
	0x06	Conference				
0x11 Brightness Boost ^{*1}	(Refer to Appendix 3 "Picture/Sound".) GXD-L52H1 is not used this command.					
0x12 Option Gamma	(Refer to Appendix 3 "General Function"). FWD-S42H1/S47H1 and GXD-L65H1 are not used this command.					
0x30 Volume	0x00-0x64		Yes	Yes	Enable	Enable
0x31 Treble ^{*2}	0x00-0x64		Yes	Yes	Disable	Enable
0x32 Bass ^{*2}	0x00-0x64		Yes	Yes	Disable	Enable
0x33 Balance	0x00-0x64		Yes	Yes	Disable	Enable
0x34 Surround	0x00	OFF	Yes	Yes	Disable	Enable
	0x01	Hall				
	0x02	Simulate				
0x35 Sound Mode	0x00	Dynamic	Yes	Yes	Disable	Enable
	0x01	Standard				
	0x03	Custom				
0x36 Default Volume Set	0x00-0x64		Yes	Yes	Enable	Enable
0x37 Volume Select	0x00	Last Memory	Yes	Yes	Enable	Enable
	0x01	Default Setting				
0x38 Max Volume Set	0x32	50	Yes	Yes	Enable	Enable
	0x46	70				
	0x64	100				

*1 Picture Mode = Vivid Only is Enabled.

*2 Sound Mode = Custom Only is Enabled.

(b) Color Temp

Syntax	Header	Category	Function	Data1	Data2	Data3	Check Sum
Control	0x8C	0x10	Code Table (2-b) [a]	0x03	Code Table (2-c)	Code Table (2-b) [b]	0xXX

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x10	Code Table (2-b) [a]	Code Table (2-c)	0xFF	0xXX

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70 Completed
	0x70	0x03	0x73 Command Canceled

Answer	Header	Answer	Return to Data Size	Return Data1	Return Data2	Check Sum
Enquiry	0x70	0x00	0x03	Code Table (2-c)	Code Table (2-b) [b]	0xXX Completed

Code Table (2-b)

[a]Function		[b]Range/Switch code	Command Control	Enquiry	Standby	Power On
0x05 Red Gain		0x00-0x1E	Yes	Yes	Disable	Enable
0x06 Green Gain						
0x07 Blue Gain						

Code Table (2-c)

Format Select	
0x00	Cool
0x01	Neutral
0x02	Warm
0x03	Custom

6. Size/Shift

(a) 8Bits Register

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Control	0x8C	0x20	Code Table (3-b) [a]	0x02	Code Table (3-b) [b]	0xXX
Enquiry	0x83			0xFF	0xFF	0XX

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70 Completed
	0x70	0x01	0x71 Limit Over
	0x70	0x02	0x72 Limit Under
	0x70	0x03	0x73 Command Canceled

Answer	Header	Answer	Return to Data Size	Return Data1	Check Sum
Enquiry	0x70	0x00	0x02	Code Table (3-b) [b]	0xXX Completed

Code Table (3-b)

[a]Function		[b]Range/Switch code	Command Control	Enquiry	Standby	Power On
0x00	H Size	0x00-0x3C	Yes	Yes	Disable	Enable
0x01	H Shift	0x00-0x3C	Yes	Yes	Disable	Enable
0x02	V Size	0x00-0x3C	Yes	Yes	Disable	Enable
0x03	V Shift	0x00-0x3C	Yes	Yes	Disable	Enable
0x04	Aspect	0x00	Wide Zoom (VIDEO Only)	Yes	Yes	Disable
		0x01	Zoom (VIDEO Only)			
		0x02	Full (VIDEO Only)			
		0x04	Normal (PC: Real, VIDEO: 4:3)			
		0x05	Full 1 (PC Only)			
		0x06	Full 2 (PC Only)			
0x05	Multi Display	0x00	OFF	Yes	Yes	Disable
		0x01	2 × 2			
		0x02	3 × 3			
		0x03	4 × 4			
		0x04	1 × 2			
		0x05	1 × 3			
		0x06	1 × 4			
		0x07	2 × 1			
		0x08	3 × 1			
		0x09	4 × 1			

(Continued)

Code Table (3-b)

[a]Function		[b]Range/Switch code		Command Control	Enquiry	Standby	Power On
0x06	Auto Pixel Adjust	0xFF	Execute	Yes	No	Disable	Enable
0x07	Dot Phase	0x00-0x1F		Yes	Yes	Disable	Enable
0x0B	Multi Position (2 × 2, 1 × 2, 2 × 1) ^{*1}	0x00 0x01 0x02 0x03	Position1 Position2 Position3 Position4	Yes	Yes	Disable	Enable
0x0C	Multi Position (3 × 3, 1 × 3, 3 × 1) ^{*1}	0x00 0x01 0x02 0x03 0x04 0x05 0x06 0x07 0x08	Position1 Position2 Position3 Position4 Position5 Position6 Position7 Position8 Position9	Yes	Yes	Disable	Enable
0x0D	Multi Position (4 × 4, 1 × 4, 4 × 1) ^{*1}	0x00 0x01 0x02 0x03 0x04 0x05 0x06 0x07 0x08 0x09 0x0A 0x0B 0x0C 0x0D 0x0E 0x0F	Position1 Position2 Position3 Position4 Position5 Position6 Position7 Position8 Position9 Position10 Position11 Position12 Position13 Position14 Position15 Position16	Yes	Yes	Disable	Enable
0x0E	Over Scan	0x00 0x01 0x02	OFF ON AUTO	Yes	Yes	Disable	Enable
0x0F	Multi Display Output Format	0x00 0x01	Tiles Window	Yes	Yes	Disable	Enable
0x11	Multi Display Batch	(Refer to Appendix 3 “Size/Shift”.)		GXD-L52H1 is not used this command.			

*1 Arrangement of Multi Position.

Multi Position (2×2)

1	2
3	4

Multi Position (1×2)

1
2

Multi Position (2×1)

1	2
---	---

Multi Position (3×3)

1	2	3
4	5	6
7	8	9

Multi Position (1×3)

1
2
3

Multi Position (3×1)

1	2	3
---	---	---

Multi Position (4×4)

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

Multi Position (1×4)

1
2
3
4

Multi Position (4×1)

1	2	3	4
---	---	---	---

(b) Multi Display Batch

(Refer to Appendix 3 “Size/Shift”.)

GXD-L52H1 is not used this command.

Code Table(1-a)

Multi Display[a]	0x00	OFF
	0x01	2 × 2
	0x02	3 × 3
	0x03	4 × 4
	0x04	1 × 2
	0x05	1 × 3
	0x06	1 × 4
	0x07	2 × 1
	0x08	3 × 1
	0x09	4 × 1
Multi Position[b]	0x00	Position1
	0x01	Position2
	0x02	Position3
	0x03	Position4
	0x04	Position5
	0x05	Position6
	0x06	Position7
	0x07	Position8
	0x08	Position9
	0x09	Position10
	0x0A	Position11
	0x0B	Position12
	0x0C	Position13
	0x0D	Position14
	0x0E	Position15
	0x0F	Position16
Multi Display Output Format[c]	0x00	Tiles
	0x01	Window
H Size[d]	0x00-0x3C	
H Shift[e]	0x00-0x3C	
V Size[f]	0x00-0x3C	
V Shift[g]	0x00-0x3C	

(C) PIP/PAP Batch

Syntax	Header	Category	Function	Data1	Data2	Data3	Data4	Data5
Control	0x8C	0x00	0x84	0x05	PIP/PAP setting Code Table(2-a)[a]	Input (Left/Main) Code Table(2-a)[b]	Input (Right/Sub) Code Table(2-a)[b]	Active Picture Code Table(2-a)[c]

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x00	0x84	0xFF	0xFF	0xXX

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70 Completed
	0x70	0x01	0x71 Limit Over
	0x70	0x02	0x72 Limit Under
	0x70	0x03	0x73 Command Canceled

Answer	Header	Answer	Return to Data Size	Data2	Data3	Data4	Data5
Enquiry	0x70	0x00	0x05	PIP/PAP setting Code Table(2-a)[a]	Input (Left/Main) Code Table(2-a)[b]	Input (Right/Sub) Code Table(2-a)[b]	Active Picture Code Table(2-a)[c]

Code Table(2-b)

[a]Function	[b]Range/Switch code	Command Control	Enquiry	Standby	Power On
0x84	PIP/PAP Batch	Yes	Yes	Disable	Enable

Code Table(2-a)

PIP/PAP Setting [a]	0x00	OFF
	0x01	P&P
	0x02	PinP
	0x03	Special PinP
PIP/PAP Input [b]	0x08	HD15 RGB
	0x09	IHD15 YUV
	0x0E	OPTION RGB
	0x0F	OPTION COMPONENT
	0x20	DVI
	0x30	Video
	0x31	S-Video
	0x84	Option Digital1(HDMI1/SDI/FW55)
	0x85	Option Digital2(HDMI2)
Active Picture [c]	0x00	Left(P&P)/Main(PinP)
	0x01	Right(P&P)/Sub(PinP)

(d) Power On Batch

(Refer to Appendix 3 “Size/Shift”.)

GXD-L52H1 is not used this command.

7. Status Enquiry

(a) Model Name

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x30	0x00	0xFF	0xFF	0xB1

Answer	Header	Answer	Return to Data Size	Return Data1	Check Sum
Enquiry	0x70	0x00	0x02	Code Table (4-a)	0xXX Completed

Code Table (4-a)

Format Select	
0x26	GXD-L52H1
0x27	GXD-L65H1
0x28	FWD-S42H1
0x29	FWD-S47H1

(b) Serial Number

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x30	0x01	0xFF	0xFF	0xB2

Answer	Header	Answer	Return to Data Size	Return Data1	Return Data2	Return Data3	Return Data4	Check Sum
Enquiry	0x70	0x00	0x05	Upper 8bit Data	Middle Upper Data	Middle Lower Data	Lower 8bit Data	0xXX Completed

Return Data1-Data4: 0x00000000-0x0098967F (0,000,000-9,999,999)

(c) Operation Time

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x30	0x02	0xFF	0xFF	0xB3

Answer	Header	Answer	Return to Data Size	Return Data1	Return Data2	Return Data3	Return Data4	Check Sum
Enquiry	0x70	0x00	0x05	Upper 8bit Data	Middle Upper Data	Middle Lower Data	Lower 8bit Data	0xXX Completed

Return Data1-Data4: 0x00000000-0xD693A3FF (0sec.-3,599,999,999sec.)

(d) Light Sensor Value

(Refer to Appendix 3 “Status Enquiry”.)

GXD-L52H1 and FWD-S42H1/S47H1 are not used this command.

(e) Soft Version (Main CPU/LAN)

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x30	0x03	0xFF	0xFF	0xB4

Answer	Header	Answer	Return to Data Size	Return Data1	Return Data2	Check Sum
Enquiry	0x70	0x00	0x03	Upper 8bit Data	Lower 8bit Data	0xXX Completed

ex) In Version0.100, it is set to 01 and 00.

(f) LAN Soft Version

(Refer to Appendix 3 “Status Enquiry”.)

GXD-L52H1 is not used this command.

(g) 8bits Register

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x30	Code Table (4-b)	0xFF	0xFF	0xXX

Answer	Header	Answer	Return to Data Size	Return Data1	Check Sum
Enquiry	0x70	0x00	0x02	Code Table (4-b)	0xXX Completed

Code Table (4-b)*

Function	Return Data	Unit
0x07	Digital 3.3 V	0x00-0xFF
0x08	Analog 24 V	0x00-0xFF
0x09	Digital 5 V	0x00-0xFF
0x0A	Temp1	0x00-0xFF
0x0B	Temp2	0x00-0xFF
0x0C	Temp3 (FWD-S42H1/S47H1 is not used this command.)	0x00-0xFF
0x0D	Temp P/S	0: Normal, 1: Abnormal
0x0E	Inverter Alarm	0: Normal, 1: Abnormal
0x0F	Soft Version (Scaler/LAN) (GXD-L52H1 is not used this command.)	0x0000-0x9999
0x11	Shutdown Log	0x00-0xFF
0x12	Digital 3.3 V (Failure)	0x00-0xFF
0x13	Digital 5 V (Failure)	0x00-0xFF
0x14	Analog 12 V (Failure)	0x00-0xFF
0x16	Analog 12 V	0x00-0xFF
0x18	Light Sensor (GXD-L52H1 and FWD-S42H1/S47H1 are not used this command.)	0: Normal, 1: Abnormal

*

- **For function 0x07, 0x08, 0x09, 0x11, 0x12, 0x13, 0x14 and 0x16 in the left table**

When the display value is 3.0 V, “0x1E” (30) is returned.

- **For function 0x0A, 0x0B and 0x0D in the left table**

When the display value is 50 °C, “0x32” (50) is returned.

When the display value is -20 °C, “0xEC” is returned.

- Inverter Alarm: 00 → Normal

01, 10, 11 → Abnormal

(h) Shutdown Log

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x30	0x11	0xFF	0xFF	0xC2

Answer	Header	Answer	Return to Data Size	Return Data1	Check Sum
Enquiry	0x70	0x00	0x02	Shutdown Log Code Table (4-c)	0xXX Completed

Return Data1: 0x00-0xFF

(i) Shutdown Log Clear

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Control	0x8C	0x30	0x11	0x02	0x00	0xCF

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70 Completed
	0x70	0x03	0x73 Command Canceled

Code Table (4-c)

Shutdown Information	
bit0	Reserved
bit1	1: FAN Sensor Abnormal 0: Normal
bit2	1: Panel Temperature Abnormal 0: Normal
bit3	1: Temperature Sensor Abnormal 0: Normal
bit4	Reserved
bit5	1: Power Abnormal (3.3 V, 5 V) 0: Normal
bit6	1: Analog Power Abnormal (12 V, 9 V, 24 V) 0: Normal
bit7	Reserved

(j) Auto Input Detect

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x30	0x30	0xFF	0xFF	0xE1

Answer	Header	Answer	Return to Data Size	Return Data1	Return Data2	Return Data3	Return Data4	Return Data5
Enquiry	0x70	0x00	0x0C	Input1 Input Type Code Table (4-e)	Input2 Input Type Code Table (4-e)	Input3 Input Type Code Table (4-e)	Input4 Input Type Code Table (4-e)	Input5 Input Type Code Table (4-e)

Return Data6	Return Data7	Return Data8	Return Data9	Return Data10
Option1 Option Type Code Table (4-e)	Option1 Input Type Code Table (4-e)	Option2 Option Type Code Table (4-e)	Option2 Input Type Code Table (4-e)	Option3 Option Type Code Table (4-e)

Return Data11 Check Sum		
Option3 Input Type Code Table (4-e)	0XX	Completed

Code Table (4-e)

Input	Input Type (Basic)		Option Type		Input Type (Option)	
INPUT1	0x02	S-Video				
INPUT2	0x01	Video				
INPUT3	0x06	RGB/YUV(Analog)				
INPUT4	0x07	DVI				
INPUT5	0x00	HDMI (FWD-S42H1/S47H1 is not used this command.)				
OPTION1			0x00	Analog Only	0x00	No Input
			0x00	Analog Only	0x03	Video/S-Video
			0x00	Analog Only	0x06	RGB/YUV (Analog)
			0x00	Analog Only	0x07	Video/S-Video/RGB/YUV (Analog)
			0x01	Analog/Com	0x04	RGB
			0x03	Com Only	0x00	No Input
			0x04	Digital Only	0x0E	Digital/Digital
			0x04	Digital Only	0x0D	Digital
OPTION2			0x00	Analog Only	0x00	No Input
OPTION3			0x00	Analog Only	0x00	No Input

(k) Auto Panel Type Detect

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x30	0x31	0xFF	0xFF	0xE2

Answer	Header	Answer	Return to Data Size	Return Data1	Check Sum
Enquiry	0x70	0x00	0x02	Code Table (4-h)	0x72

Code Table (4-h)

Panel Type
0x00 LCD

Code Table (4-i)

H_Resolution	0x0780(1920)
V_Resolution	0x0438(1080)

Code Table (4-j)

Input Quantity	0x05
Option Slot Quantity	0x01

(L) Auto Plug Detect

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x30	0x32	0xFF	0xFF	0xE3
Answer	Header	Answer	Return to Data Size	Return Data1	Return Data2	Return Data3
Enquiry	0x70	0x00	0x21	Panel Type Code Table (4-h)	H_Resolution (H) Code Table (4-i)	H_Resolution (L) Code Table (4-i)
Return Data4	Return Data5	Return Data6	Return Data7			
V_Resolution (H) Code Table (4-i)	V_Resolution (L) Code Table (4-i)	Input Quantity Code Table (4-j)	Input1 Input Type Code Table (4-e)			
Return Data8	Return Data9	Return Data10	Return Data11			
Input2 Input Type Code Table (4-e)	Input3 Input Type Code Table (4-e)	Input4 Input Type Code Table (4-e)	Input5 Input Type Code Table (4-e)			
Return Data12	Return Data13	Return Data14	Return Data15			
Option Slot Quantity Code Table (4-j)	Option1 Option Type Code Table (4-e)	Option1 Input Type Code Table (4-e)	Option2 Option Type Code Table (4-e)			
Return Data16	Return Data17	Return Data18	Return Data19			
Option2 Input Type Code Table (4-e)	Option3 Option Type Code Table (4-e)	Option3 Input Type Code Table (4-e)	(Reserve) 0xFF			
Return Data20	Return Data21	Return Data22	Return Data23			
(Reserve) 0xFF	(Reserve) 0xFF	(Reserve) 0xFF	(Reserve) 0xFF			
Return Data24	Return Data25	Return Data26	Return Data27			
(Reserve) 0xFF	(Reserve) 0xFF	(Reserve) 0xFF	(Reserve) 0xFF			
Return Data28	Return Data29	Return Data30	Return Data31			
(Reserve) 0xFF	(Reserve) 0xFF	(Reserve) 0xFF	(Reserve) 0xFF			
Return Data32	Check Sum					
(Reserve) 0xFF	0XX					

Code Table (4-d)

[a]Function	[b]Range/Switch code	Command Control	Enquiry	Standby	Power On
0x00 Model Name	0x27	No	Yes	Enable	Enable
0x01 Serial Number	0x00000000-0x0098967F (0,000,000-9,999,999)				
0x02 Operation Time	0x00000000-0xD693A3FF (0sec.-3,599,999,999sec.)				
0x03 Soft Version (Main)	0x0000-0x9999				
0x07 Digital 3.3V	0x00-0xFF				
0x08 Analog 24V	0x00-0xFF				
0x09 Digital 5V	0x00-0xFF				
0x0A Temp1	0x00-0xFF				
0x0B Temp2	0x00-0xFF				
0x0C Temp3	(Refer to Appendix 3 "Status Enquiry".) FWD-S42H1/S47H1 is not used this command.				
0x0D Temp P/S	0x00-0xFF				
0x0E Inverter Alarm	0:Normal, 1:Abnormal				
0x0F Soft Version (LAN)	(Refer to Appendix 3 "Status Enquiry"). GXD-L52H1 is not used this command.				
0x11 Shutdown Log	0x00-0xFF				
0x12 Digital 3.3V (Failure)	0x00-0xFF				
0x13 Digital 5V (Failure)	0x00-0xFF				
0x14 Analog 12V (Failure)	0x00-0xFF				
0x16 Analog 12V	0x00-0xFF				
0x17 Light Sensor Value	(Refer to Appendix 3 "Status Enquiry"). GXD-L52H1 and FWD-S42H1/S47H1 are not used this command.				
0x18 Light Sensor (Failure)	(Refer to Appendix 3 "Status Enquiry"). GXD-L52H1 and FWD-S42H1/S47H1 are not used this command.				
0x30 Auto Input Detect					
0x31 Auto Panel Type Detect					

8. User Reset

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Control	0x8C	0x50	Code Table (5)	0x02	0xFF	0xXX

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70 Completed
	0x70	0x03	0x73 Command Canceled

Code Table (5)

Function	Range/Switch code	Command Control	Enquiry	Standby	Power On
0x00	Picture Reset	Yes	No	Disable	Enable
0x01	Audio Reset				
0x02	Size Reset	Size, Shift			
0x03	Picture Reset2 (FW50)	Contrast, Brightness, Chroma, Phase			
0x04	All Reset				

Appendix 3

Difference for Each Model

GXD-L52H1

General Function

[a]Function	[b]Range/Switch Code			Command Control	Enquiry	Standby	Power On
0x01 Input Select	0x08	HD15 RGB		Yes	Yes	Disable	Enable
	0x09	HD15 YUV					
	0x0E	OPTION RGB					
	0x0F	OPTION COMPONENT					
	0x20	DVI					
	0x30	Video					
	0x31	S-Video					
	0x44	HDMI					
	0x84	Option Digital1 (HDMI1/SDI/FW50)					
	0x85	Option Digital2 (HDMI2)					
0x1D Color Matrix	0x00 YCbCr	0x00	480P	Yes	Yes	Disable	Enable
		0x01	1080i				
		0x02	720P				
		0x03	480i				
	0x01 YPbPr	0x00	480P				
		0x01	1080i				
		0x02	720P				
		0x03	480i				
0x23	Time Set (Week)	Week: 0x00-0x06			Yes	Yes	Disable
0x24 Input Detect (Option)	0x00 FW12 (HD15) 0x02 FW11 (BNC) 0x05 FW50 (RGB) 0x06 FW20/21 (UART + CTRL-S) 0x08 FW15 (HDMI × 2) 0x09 FW16 (Digital × 1) 0x0F Not Connect	0x00	FW12 (HD15)	No	Yes	Disable	Enable
		0x02	FW11 (BNC)				
		0x05	FW50 (RGB)				
		0x06	FW20/21 (UART + CTRL-S)				
		0x08	FW15 (HDMI × 2)				
		0x09	FW16 (Digital × 1)				
		0x0F	Not Connect				
0x35 PAP Input Detect (Left/Main)	0x08 HD15 RGB 0x09 IHD15 YUV 0x0E OPTION RGB 0x0F OPTION COMPONENT 0x20 DVI 0x30 Video 0x31 S-Video 0x44 HDMI 0x84 Option Digital1 (HDMI1/SDI/FW50) 0x85 Option Digital2 (HDMI2)	0x08	HD15 RGB	No	Yes	Disable	Enable

(Continued)

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x36	PAP Input Detect (Right/Sub)	0x08	HD15 RGB	No	Yes	Disable	Enable
		0x09	IHD15 YUV				
		0x0E	OPTION RGB				
		0x0F	OPTION COMPONENT				
		0x20	DVI				
		0x30	Video				
		0x31	S-Video				
		0x44	HDMI				
		0x84	Option Digital1 (HDMI1/SDI/FW50)				
		0x85	Option Digital2 (HDMI2)				
0x40	Screen Saver	0x00	OFF	Yes	Yes	Disable	Enable
		0x01	All White ON				
		0x02	Sweep ON				
0x70	Input Skip	bit0	HD15	Yes	Yes	Disable	Enable
		bit1	DVI				
		bit2	HDMI				
		bit3	Video				
		bit4	S-Video				

Code Table (2-a)

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x77	Priority Signal Select	0x00	Input1 Auto	No	Yes	Disable	Enable
		0x01	Input1 RGB				
		0x02	Input1 YPbPr				

Syntax Sum	Header	Category	Function	Data1	Data2	Data3	Check
Control	0x8C	0x00	Code Table (2-a) [a]	0x03	Code Table (2-d)	Code Table (2-a) [b]	0XXX

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70 Completed
	0x70	0x01	0x71 Limit Over
	0x70	0x02	0x72 Limit Under
	0x70	0x03	0x73 Command Canceled

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x00	Code Table (2-a) [a]	Code Table (2-d)	0xFF	0XXX

Answer	Header	Answer	Return to Data Size	Return Data1	Data2	Check Sum
Enquiry	0x70	0x00	0x02	Code Table (2-a) [b]	0xFF	0XXX Completed

Code Table (2-d)

Input Select	
0x00	HD15
0x01	Option

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x8D	Picture Mute Used in firmware Ver. 1.16 or higher.	0x00	OFF (Mute Cancel)	Yes	Yes	Enable	Enable
		0x01	ON				

Picture/Sound

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x0E	Gamma Correct	0x00	High	Yes	Yes	Disable	Enable
		0x01	Mid				
		0x02	Low				
0x12	Option Gamma Used in firmware Ver. 1.5 or higher.	0x00	Off				
		0x01	On				

FWD-S42H1/S47H1

General Function

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x01	Input Select	0x08	HD15 RGB	Yes	Yes	Disable	Enable
		0x09	HD15 YUV				
		0x0E	OPTION RGB				
		0x0F	OPTION COMPONENT				
		0x20	DVI				
		0x30	Video				
		0x31	S-Video				
		0x84	Option Digital1 (HDMI1/SDI/FW50)				
		0x85	Option Digital2 (HDMI2)				
0x23	Time Set (Week) (Function provided only for Enquiry)	Week: 0x00-0x06		No	Yes	Enable	Enable

(Continued)

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x35	(Left/Main)	0x08	HD15 RGB	No	Yes	Disable	Enable
		0x09	IHD15 YUV				
		0x0E	OPTION RGB				
		0x0F	OPTION COMPONENT				
		0x20	DVI				
		0x30	Video				
		0x31	S-Video				
		0x84	Option Digital1 (HDMI1/SDI/FW50)				
0x36	(Right/Sub)	0x85	Option Digital2 (HDMI2)				
		0x08	HD15 RGB	No	Yes	Disable	Enable
		0x09	IHD15 YUV				
		0x0E	OPTION RGB				
		0x0F	OPTION COMPONENT				
		0x20	DVI				
		0x30	Video				
		0x31	S-Video				
0x40	Screen Saver	0x84	Option Digital1 (HDMI1/SDI/FW50)	Yes			
		0x85	Option Digital2 (HDMI2)				
		0x00	OFF		Yes	Disable	Enable
		0x01	All White ON				
0x70	Input Skip	0x02	Sweep ON	Yes			
		0x03	Standby				
		bit0	HD15				
		bit1	DVI				
		bit2	FWD-S42H1/S47H1 is not used this command.				
		bit3	Video				
		bit4	S-Video				

Code Table (2-a)

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x77	Priority Signal Select	0x00	Input1 Auto	No	Yes	Disable	Enable
		0x01	Input1 RGB				
		0x02	Input1 YPbPr				

Syntax Sum	Header	Category	Function	Data1	Data2	Data3	Check
Control	0x8C	0x00	Code Table (2-a) [a]	0x03	Code Table (2-d)	Code Table (2-a) [b]	0XX

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70 Completed
	0x70	0x01	0x71 Limit Over
	0x70	0x02	0x72 Limit Under
	0x70	0x03	0x73 Command Canceled

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x00	Code Table (2-a) [a]	Code Table (2-d)	0xFF	0xXX

Answer	Header	Answer	Return to Data Size	Return Data1	Data2	Check Sum
Enquiry	0x70	0x00	0x02	Code Table (2-a) [b]	0xFF	0xXX Completed

Code Table (2-d)

Input Select	
0x00	HD15
0x01	Option

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x80	Standby Screen Saver Time	0x00	0.5H	Yes	Yes	Enable	Enable
		Data	1h*Data (Data: 0x01-0x17)				
0x81	Power On Delay	0x00	OFF	Yes	Yes	Enable	Enable
		0x01-0x78:	1sec*Data				
0x82	Audio Delay	0x00-0x18:	5msec*Data	Yes	Yes	Enable	Enable
0x83	IP Address (Player)	IP Address 0-3 (Read)		No	Yes	Enable	Enable
0x86	HD15 Out	0x00	Main (Default)	Yes	Yes	Enable	Enable
		0x01	Option				
		0x02	Mute				
0x8D	Picture Mute Used in firmware Ver. 1.16 or higher.	0x00	OFF (Mute Cancel)	Yes	Yes	Enable	Enable
		0x01	ON				

Picture/Sound

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x0E	Gamma Correct	0x00	High	Yes	Yes	Disable	Enable
		0x01	Mid				
		0x02	Low				
		0x03	DICOM GSDF Sim.				
0x11	Brightness Boost	0x00	On				
		0x01	Off				
	(Possible only for Picture mode = Vivid.)						

Size/Shift

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On		
0x11 Multi Display Batch				Yes	Yes	Disable	Enable		
Syntax	Header	Category	Function	Data1	Data2	Data3	Data4		
Control	0x8C	0x20	0x11	0x08	Multi Setting Code Table (1-a) [a]	Position Code Table (1-a) [b]	Output Format Code Table (1-a) [c]		
				Data5	Data6	Data7	Data8		
				H-Size Code Table (1-a) [d]	H-Shift Code Table (1-a) [e]	V-Size Code Table (1-a) [f]	V-Shift Code Table (1-a) [g]		
Syntax	Header	Category	Function	Data1	Data2	Check Sum			
Enquiry	0x83	0x20	0x11	0xFF	0xFF	0XX			
Answer	Header	Answer	Check Sum						
Control	0x70	0x00	0x70	Completed					
	0x70	0x01	0x71	Limit Over					
	0x70	0x02	0x72	Limit Under					
	0x70	0x03	0x73	Command Canceled					
Answer	Header	Answer	Return to Data Size	Data2	Data3	Data4			
Enquiry	0x70	0x00	0x08	Multi Setting Code Table (1-a) [a]	Position Code Table (1-a) [b]	Output Format Code Table (1-a) [c]			
				Data5	Data6	Data7	Data8	Check Sum	
				H-Size Code Table (1-a) [d]	H-Shift Code Table (1-a) [e]	V-Size Code Table (1-a) [f]	V-Shift Code Table (1-a) [g]	0XX	
[a]Function		[b]Range/Switch code		Command Control	Enquiry	Standby	Power On		
0x85 Power On Batch				Yes	Yes	Enable	Control/Disable Enquiry/Enable		
Syntax	Header	Category	Function	Data1	Data2	Data3	Check Sum		
Control	0x8C	0x00	0x85	0x03	Input Select Code Table (1-a) [a]	Volume Code Table (1-a) [b]	0XX		
Syntax	Header	Category	Function	Data1	Data2	Check Sum			
Enquiry	0x83	0x00	0x85	0xFF	0xFF	0XX			

Answer	Header	Answer	Check Sum	
Control	0x70	0x00	0x70	Completed
	0x70	0x01	0x71	Limit Over
	0x70	0x02	0x72	Limit Under
	0x70	0x03	0x73	Command Canceled

Answer	Header	Answer	Return to Data Size	Data2	Data3	Check Sum
Enquiry	0x70	0x00	0x03	Input Select Code Table (1-a) [a]	Volume Code Table (1-a) [b]	0xXX

Code Table (1-a)

Input Select [a] ^{*2}	0x08	HD15 RGB
	0x09	HD15 YUV
	0x0E	OPTION RGB
	0x0F	OPTION COMPONENT
	0x20	DVI
	0x30	Video
	0x31	S-Video
	0x84	Option Digital1 (HDMI1/SDI/FW50)
	0x85	Option Digital2 (HDMI2)
Volume [b]	0x00-0x64	

*1 When this control command is received, the power of a set will be turned on first.

*2 Input Select setting, Auto Signal Detect becomes Disable. When Option Slot is connected, Option command is Enable.

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x0F	Soft Version (LAN)	0x0000-0x9999		No	Yes	Enable	Enable

Syntax	Header	Category	Function	Data1	Data2	Data3	Check Sum
Control	0x8C	0x30	0x0F	0x03	Upper 8bit Data	Lower 8bit Data	0xXX

ex) In Version1.000, Data2 and 3 are set to 10 and 00.

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x30	0x0F	0xFF	0xFF	0xC0

Answer	Header	Answer	Check Sum	
Control	0x70	0x00	0x70	Completed
	0x70	0x03	0x73	Command Canceled

Answer	Header	Answer	Return to Data Size	Return Data1	Return Data2	Check Sum
Enquiry	0x70	0x00	0x03	Upper 8bit Data	Lower 8bit Data	0xXX Completed

Return Data1-2: ex) In Version1.000, Data1 and 2 are set to 10 and 00.

GXD-L65H1

General Function

[a]Function	[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x01 Input Select	0x08	HD15 RGB	Yes	Yes	Disable	Enable
	0x09	HD15 YUV				
	0x0E	OPTION RGB				
	0x0F	OPTION COMPONENT				
	0x20	DVI				
	0x30	Video				
	0x31	S-Video				
	0x44	HDMI				
	0x84	Option Digital1 (HDMI1/SDI/FW50)				
	0x85	Option Digital2 (HDMI2)				
0x23 Time Set (Week) (Function provided only for Enquiry)	Week: 0x00-0x06		No	Yes	Enable	Enable
0x35 PAP Input Detect (Left/Main)	0x08	HD15 RGB	No	Yes	Disable	Enable
	0x09	IHD15 YUV				
	0x0E	OPTION RGB				
	0x0F	OPTION COMPONENT				
	0x20	DVI				
	0x30	Video				
	0x31	S-Video				
	0x44	HDMI				
	0x84	Option Digital1 (HDMI1/SDI/FW50)				
	0x85	Option Digital2 (HDMI2)				
0x36 PAP Input Detect (Right/Sub)	0x08	HD15 RGB	No	Yes	Disable	Enable
	0x09	IHD15 YUV				
	0x0E	OPTION RGB				
	0x0F	OPTION COMPONENT				
	0x20	DVI				
	0x30	Video				
	0x31	S-Video				
	0x44	HDMI				
	0x84	Option Digital1 (HDMI1/SDI/FW50)				
	0x85	Option Digital2 (HDMI2)				
0x40 Screen Saver	0x00	OFF	Yes	Yes	Disable	Enable
	0x01	All White ON				
	0x02	Sweep ON				
	0x03	Standby				
0x70 Input Skip	bit0	HD15	Yes	Yes	Disable	Enable
	bit1	DVI				
	bit2	HDMI				
	bit3	Video				
	bit4	S-Video				

(Continued)

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x77	Priority Signal Select	0x00	Input1 Auto	Yes	Yes	Disable	Enable
		0x01	Input1 RGB				
		0x02	Input1 YPbPr				

Syntax Sum	Header	Category	Function	Data1	Data2	Data3	Check
Control	0x8C	0x00	Code Table (2-a) [a]	0x03	Code Table (2-d)	Code Table (2-a) [b]	0xXX

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70 Completed
	0x70	0x01	0x71 Limit Over
	0x70	0x02	0x72 Limit Under
	0x70	0x03	0x73 Command Canceled

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x00	Code Table (2-a) [a]	Code Table (2-d)	0xFF	0XX

Answer	Header	Answer	Return to Data Size	Return Data1	Data2	Check Sum
Enquiry	0x70	0x00	0x02	Code Table (2-a) [b]	0xFF	0XX Completed

Code Table (2-d)

Input Select	
0x00	HD15
0x01	Option

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x80	Standby Screen Saver Time	0x00	0.5H Data 1h*Data (Data: 0x01-0x17)	Yes	Yes	Enable	Enable
0x81	Power On Delay	0x00	OFF 0x01-0x78: 1sec*Data	Yes	Yes	Enable	Enable
0x82	Audio Delay	0x00-0x18:	5msec*Data	Yes	Yes	Enable	Enable
0x83	IP Address (Player)	IP Address 0-3 (Read)		No	Yes	Enable	Enable
0x85	Power On Batch	Refer to Manual					
0x86	HD15 Out	0x00	Main (Default)	Yes	Yes	Enable	Enable
		0x01	Option				
		0x02	Mute				
0x89	Light Sensor	0x00	OFF	Yes	Yes	Disable	Enable
		0x01	ON				

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x8A	RGB Signal	0x00	VIDEO	Yes	Yes	Disable	Enable
		0x01	PC				

Syntax Sum	Header	Category	Function	Data1	Data2	Data3	Check
Control	0x8C	0x00	Code Table (3-a) [a]	0x03	Code Table (3-d)	Code Table (3-a) [b]	0XXX

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70 Completed
	0x70	0x01	0x71 Limit Over
	0x70	0x02	0x72 Limit Under
	0x70	0x03	0x73 Command Canceled

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x00	Code Table (3-a) [a]	Code Table (3-d)	0xFF	0XXX

Answer	Header	Answer	Return to Data Size	Return Data1	Data2	Check Sum
Enquiry	0x70	0x00	0x02	Code Table (3-a) [b]	0xFF	0XXX Completed

Code Table (3-d)

Input Select	
0x00	HD15
0x01	DVI
0x02	HDMI

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x8B	Warm Up Mode	0x00	OFF	Yes	Yes	Enable	Enable
		0x01	On (TIMER)				
		0x02	On (ALL)				
0x8C	Warm Up Time		0x01-0x0C	Yes	Yes	Enable	Enable
0x8D	Picture Mute	0x00	OFF (Mute Cancel)	Yes	Yes	Enable	Enable
		0x01	ON				

Picture/Sound

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x0E	Gamma Correct	0x00	High	Yes	Yes	Disable	Enable
		0x01	Mid				
		0x02	Low				
		0x03	DICOM GSDF Sim.				
0x11	Brightness Boost	0x00	On	Yes	Yes	Enable	Enable
		0x01	Off				
(Possible only for Picture mode = Vivid.)							

Size/Shift

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On		
0x11 Multi Display Batch				Yes	Yes	Disable	Enable		
Syntax	Header	Category	Function	Data1	Data2	Data3	Data4		
Control	0x8C	0x20	0x11	0x08	Multi Setting Code Table (1-a) [a]	Position Code Table (1-a) [b]	Output Format Code Table (1-a) [c]		
				Data5	Data6	Data7	Data8		
				H-Size Code Table (1-a) [d]	H-Shift Code Table (1-a) [e]	V-Size Code Table (1-a) [f]	V-Shift Code Table (1-a) [g]		
Syntax	Header	Category	Function	Data1	Data2	Check Sum			
Enquiry	0x83	0x20	0x11	0xFF	0xFF	0XX			
Answer	Header	Answer	Check Sum						
Control	0x70	0x00	0x70	Completed					
	0x70	0x01	0x71	Limit Over					
	0x70	0x02	0x72	Limit Under					
	0x70	0x03	0x73	Command Canceled					
Answer	Header	Answer	Return to Data Size	Data2	Data3	Data4			
Enquiry	0x70	0x00	0x08	Multi Setting Code Table (1-a) [a]	Position Code Table (1-a) [b]	Output Format Code Table (1-a) [c]			
				Data5	Data6	Data7	Data8		
				H-Size Code Table (1-a) [d]	H-Shift Code Table (1-a) [e]	V-Size Code Table (1-a) [f]	V-Shift Code Table (1-a) [g]		

[a]Function	[b]Range/Switch code		Command Control	Enquiry	Standby	Power On	
0x85	Power On Batch		Yes	Yes	Enable	Control/Disable Enquiry/Enable	
Syntax	Header	Category	Function	Data1	Data2	Data3	Check Sum
Control	0x8C	0x00	0x85	0x03	Input Select Code Table (1-a) [a]	Volume Code Table (1-a) [b]	0xXX
Syntax	Header	Category	Function	Data1	Data2	Check Sum	
Enquiry	0x83	0x00	0x85	0xFF	0xFF	0xXX	
Answer	Header	Answer	Check Sum				
Control	0x70	0x00	0x70	Completed			
	0x70	0x01	0x71	Limit Over			
	0x70	0x02	0x72	Limit Under			
	0x70	0x03	0x73	Command Canceled			
Answer	Header	Answer	Return to Data Size	Data2	Data3	Check Sum	
Enquiry	0x70	0x00	0x03	Input Select Code Table (1-a) [a]	Volume Code Table (1-a) [b]	0xXX	

Code Table (1-a)

Input Select [a] ^{*2}	0x08	HD15 RGB
	0x09	HD15 YUV
	0x0E	OPTION RGB
	0x0F	OPTION COMPONENT
	0x20	DVI
	0x30	Video
	0x31	S-Video
	0x84	Option Digital1 (HDMI1/SDI/FW50)
	0x85	Option Digital2 (HDMI2)
Volume [b]	0x00-0x64	

*1 When this control command is received, the power of a set will be turned on first.

*2 Input Select setting, Auto Signal Detect becomes Disable. When Option Slot is connected, Option command is Enable.

Status Enquiry

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x0F	Soft Version (LAN)	0x0000-0x9999		No	Yes	Enable	Enable

Syntax	Header	Category	Function	Data1	Data2	Data3	Check Sum
Control	0x8C	0x30	0x0F	0x03	Upper 8bit Data	Lower 8bit Data	0xXX

ex) In Version1.000, Data2 and 3 are set to 10 and 00.

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x30	0x0F	0xFF	0xFF	0xC0

Answer	Header	Answer	Check Sum
Control	0x70	0x00	0x70 Completed
	0x70	0x03	0x73 Command Canceled

Answer	Header	Answer	Return to Data Size	Return Data1	Return Data2	Check Sum
Enquiry	0x70	0x00	0x03	Upper 8bit Data	Lower 8bit Data	0xXX Completed

Return Data1-2: ex) In Version1.000, Data1 and 2 are set to 10 and 00.

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x17	Light Sensor Value	0x00000000-0xFFFFFFFF (lux)		No	Yes	Enable	Enable

Syntax	Header	Category	Function	Data1	Data2	Check Sum
Enquiry	0x83	0x30	0x17	0xFF	0xFF	0xC8

Answer	Header	Answer	Return to Data Size	Return Data1	Return Data2	Return Data3	Return Data4	Check Sum
Enquiry	0x70	0x00	0x05	Upper 8bit Data	Middle Upper Data	Middle Lower Data	Lower 8bit Data	0xXX Completed

Return Data1-Data4: 0x00000000-0xFFFFFFFF (lux)

[a]Function		[b]Range/Switch Code		Command Control	Enquiry	Standby	Power On
0x18	Light Sensor (Failure)	0x00-0xFF		No	Yes	Enable	Enable

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